

Listing of the Claims

This listing of the claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method for forming a three-dimensional polymeric structure, the method comprising:
 - providing at least one paint layer and a bonding layer, the bonding layer coupled to the at least one paint layer and including a first ~~exterior~~ surface wherein the bonding layer comprises a chlorinated polyolefin;
 - extruding a structural sheet of at least one polymeric material at an extrusion temperature, the sheet having a thickness of at least 0.25 inches and a second ~~exterior~~ surface;
 - ~~providing a thermoplastic material for use as an adhesive between the bonding layer and the structural sheet~~;
 - cooling the structural sheet from the extrusion temperature to a predetermined temperature which is greater than an adhesive activation temperature of the bonding layer;
 - joining the first ~~exterior~~ surface to the second ~~exterior~~ surface so that the bonding layer is in direct contact with the substrate to form a thermoformable sheet by using heat from the structural sheet at the predetermined temperature to activate adhesive properties of the thermoplastic material;
 - forcing the thermoformable sheet against a three-dimensional mold while the sheet is at a thermoformable temperature to deform the sheet into a three-dimensional structure; and
 - removing the three-dimensional structure from the mold.
2. (Currently Amended) The method of claim 1, wherein the first ~~exterior~~ surface and the second ~~exterior~~ surface are joined to one another after the structural sheet has undergone at least 40 percent shrinkage from its total shrinkage while cooling from the extrusion temperature.
3. (Previously Presented) The method of claim 2, wherein the thermoformable sheet is joined to the laminate after the sheet has shrunk at least 90 percent from its total shrinkage.

4. (Currently Amended) The method of claim 1, ~~wherein at least portions of the first exterior surface and the second exterior surface comprise the thermoplastic material, the thermoplastic material having an adhesive activation temperature and~~ wherein the first exterior surface and the second exterior surface are joined to one another while at least one of the first exterior surface and the second exterior surface is at a temperature no less than the adhesion activation temperature and less than the extrusion temperature.

5. (Original) The method of claim 4, wherein the extrusion temperature is greater than 350 degrees Fahrenheit.

6. (Original) The method of claim 4, wherein the adhesion activation temperature is approximately 270 degrees Fahrenheit.

7. (Currently Amended) The method of claim 1, wherein the second exterior surface of the structural sheet is less than the extrusion temperature when the second exterior surface is joined to the ~~second exterior~~ first surface.

8. (Currently Amended) The method of claim 1, wherein the ~~first exterior~~ second surface of the structural sheet is at a temperature less than a melting point of the at least one polymeric material when the first exterior surface is being joined to the second exterior surface.

9. (Currently Amended) The method of claim 8, wherein the second exterior surface of the structural sheet is less than approximately 266 degrees Fahrenheit when the first exterior surface is being joined to the second exterior surface.

10. (Currently Amended) The method of claim 1, wherein the second exterior surface of the structural sheet is at a temperature less than approximately 190 degrees Fahrenheit when the first exterior surface is joined to the second exterior surface.

11. (Currently Amended) The method of claim 4 49, wherein the bonding layer comprises a covalent adhesive.

12. (Previously Presented) The method of claim 11, wherein the covalent adhesive is an olefinic material.

13. (Currently Amended) The method of claim 1, wherein materials of the first exterior surface and the second exterior surface are cross linked when being joined to one another.
14. (Currently Amended) The method of claim 1, wherein at least one of the first exterior surface and the second exterior surface includes a reactive cross-link adhesive.
15. (Currently Amended) The method of claim 1, wherein the first exterior surface includes a reactive cross-link adhesive.
16. (Original) The method of claim 1, wherein the bonding layer has a thickness of less than about 0.2 mils.
17. (Original) The method of claim 1, wherein the at least one paint layer and the bonding layer are part of a laminate having a thickness of less than about 2 mils and wherein the thermoformable sheet consists solely of the structural sheet and the laminate.
18. (Original) The method of claim 1, wherein the mold is configured to deform the thermoformable sheet into a canoe hull.
19. (Currently Amended) The method of claim 1, wherein the structural sheet includes polyethylene.
20. (Original) The method of claim 19, wherein the structural sheet is composed substantially entirely of polyethylene.
21. (Previously Presented) The method of claim 1, including providing a polyvinylidene fluoride layer coupled to the at least one paint layer.
22. (Original) The method of claim 1, wherein the at least one paint layer includes a backing color and at least one additional color distinct from the backing color.
23. (Original) The method of claim 22, wherein the at least one additional distinct color is provided in a plurality of shapes.

24. (Previously Presented) The method of claim 23, wherein the plurality of shapes are distinct from one another.

25. (Previously Presented) The method of claim 23, wherein the plurality of shapes are in the shape of environmental vegetation.

26. (Currently Amended) The method of claim 1, wherein the second exterior surface is at a temperature less than 350 degrees Fahrenheit when joined to the first exterior surface.

27. (Currently Amended) A method for forming a thermoformable panel, the method comprising:

providing at least one paint layer and a bonding layer coupled to the at least one paint layer, ~~and the bonding layer~~ including a first exterior surface and an adhesive activation temperature of approximately 270 degrees Fahrenheit;

providing a structural sheet of at least one polymeric material, the sheet having a thickness of at least 0.25 inches and including a second exterior surface;

~~providing a thermoplastic material for use as an adhesive between the bonding layer and the structural sheet;~~

~~cooling the structural sheet from the extrusion temperature to a predetermined temperature; and~~

joining the first exterior surface to the second exterior surface so that the bonding layer is in direct contact with the substrate to form a thermoformable panel ~~by using heat from the structural sheet at the predetermined temperature to activate adhesive properties of the thermoplastic material~~ bonding layer when the structural sheet is at a temperature which is greater than the adhesive activation temperature of the bonding layer.

28. (Currently Amended) The method of claim 27, wherein the first exterior surface and the second exterior surface are joined to one another after the structural sheet has undergone at least 40 percent shrinkage from its total shrinkage while cooling from the extrusion temperature.

29. (Previously Presented) The method of claim 28, wherein the thermoformable sheet is joined to the laminate after the sheet has shrunk at least 90 percent from its total shrinkage.

30. (Original) The method of claim 27, wherein the bonding layer includes a covalent adhesive.

31. (Original) The method of claim 27, wherein the bonding layer has a thickness of less than about 0.2 mils.

32. (Original) The method of claim 27, wherein the step of providing a structural sheet comprises extruding a structural sheet of at least one polymeric material.

33-48. (Cancelled)

49. (Currently Amended) A method for forming a thermoformable panel, the method comprising:

providing at least one paint layer and a bonding layer coupled to the at least one paint layer, ~~and the bonding layer~~ including a first ~~exterior~~ surface and an adhesive activating temperature;

providing a structural sheet of at least one polymeric material, the sheet having a second ~~exterior~~ surface; and

~~using a thermoplastic material that is activated at the predetermined temperature~~
for joining the first ~~exterior~~ surface to the second ~~exterior~~ surface so that the bonding layer is in direct contact with the substrate to form the thermoformable panel when the structural sheet is at a temperature greater than the adhesive actuation temperature and between approximately 270 degrees Fahrenheit and approximately 300 degrees Fahrenheit.

50. (Currently Amended) A method for forming a thermoformable panel, the method comprising:

providing at least one paint layer and a bonding layer coupled to the at least one paint layer, ~~and the bonding layer~~ including a first ~~exterior~~ surface wherein the bonding layer comprises a covalent adhesive;

~~providing~~ extruding a structural sheet of at least one polymeric material at an extrusion temperature, the sheet having a second ~~exterior~~ surface;

cooling the structural sheet from the extrusion temperature ~~to a predetermined temperature~~; and

~~using a thermoplastic material that is activated at the predetermined temperature~~ for joining the first ~~exterior~~ surface directly to the second ~~exterior~~ surface so that the bonding layer is in direct contact with the substrate to form the thermoformable panel without using a backing sheet ~~between~~ between the at least one paint layer and the structural sheet.

51. (New) The method of claim 50 wherein the covalent adhesive comprises chlorinated polyolefin.

52. (New) The method of claim 50 wherein the covalent adhesive comprises an adhesive activation temperature of about 270 degrees Fahrenheit.

53. (New) The method of claim 52 wherein the first surface and the second surface are joined when the structural sheet is at a temperature which is greater than the adhesive activation temperature.

54. (New) The method of claim 50 wherein the bonding layer is not a backing sheet.